Patent claims

1. Method for operation of a tomography apparatus which comprises a scanning unit (1) that can rotate around a system axis (Z), a bearing device (9) for an examination subject and a control device (18) for activation of the scanning unit (1), whereby the rotation of the scanning unit (1) is not interrupted from the beginning of the examination of a first examination subject (U1) until the end of the examination of a second examination subject (U2),
characterized in that
the rotation frequency (f_{Rot}) of the scanning unit (1) is set differently dependent on the type of the desired examination, for example for an examination of the heart or of the abdomen of a patient, and, when no examination of an examination subject occurs, a preset rest rotation frequency (f_A) is set that is smaller than the rotation frequency (f_{Rot}) available for the various examinations or lies in the range of the average value of the rotation frequencies (f_{Rot}) available for the various examinations.

2. Method according to claim 1,
characterized in that
the time span (Δt) of the uninterrupted rotation of the scanning unit (1) extends over a work shift, over a work day or over a plurality of examinations.

3. Method according to any of the claims 1 or 2,
characterized in that
the time span (Δt) of the uninterrupted rotation of the scanning unit 91) extends over at least one hour or over at least three hours.

4. Method according to any of the claims 1 through 3,
characterized in that
the tomography apparatus is an x-ray computer tomography (CT) apparatus whose scanning unit (1) comprises an x-ray source (2) that can be rotated around the

system axis (Z) and a detector system (5) for acquisition of the x-ray radiation emanating from the x-ray source (2), whereby at least the rotation of the x-ray source (2) is not interrupted from the beginning of the examination of a first examination subject (U1) until the end of the examination of a second examination subject (U2).

5. Method according to claim 4, whereby the examination of the first and/or second examination subject (U1, U2) comprises the following method steps:

a) acquisition of an x-ray shadow image of the examination subject given rotating x-ray source (2),

and then:

b) implementation of a slice and/or volume scanning of the examination subject with a rotating x-ray source, whereby the x-ray source (2) emits x-ray radiation at a plurality of angle positions and respective projection data are detected by the detector system (5),

and whereby the rotation of the x-ray source (2) is not interrupted from the beginning of the step a) until the end of the step b).

6. Method according to claim 5,

whereby, for acquisition of the x-ray shadow image in step a), the x-ray source (2) emits x-ray radiation in a pulse-like manner at a respective angle position predeterminable for the x-ray shadow image, whereby corresponding radiographic data are detected by the detector system (5), and whereby in particular the x-ray source (2) is moved parallel to the system axis (Z) and relative to the examination subject.

7. Method according to claim 4, whereby the examination of the first and/or second examination subject (U1, U2) comprises the following steps:

a) implementation of a slice and/or volume scanning of the examination subject with a rotating x-ray source (2), whereby the x-ray source (2) emits x-ray radiation at a plurality of angle positions and respective projection

data are detected by the detector system (5), and whereby in particular the x-ray source (2) is moved parallel to the system axis (Z) and relative to the examination subject,

b) generation of an x-ray shadow image of the examination subject simultaneously with the slice and/or volume scanning, in that matching projection data are selected for the x-ray shadow image from the data accumulating in the slice and/or volume scanning.

8. Method according to claim 4, whereby the examination of the first and/or second examination subject (U1, U2) comprises the following method steps:

a) implementation of a slice and/or volume scanning of the examination subject with a rotating x-ray source (2), whereby the x-ray source (2) emits x-ray radiation at a plurality of angle positions and respective projection data are detected by the detector system (5), and whereby in particular the x-ray source (2) is moved parallel to the system axis (Z) and relative to the examination subject;

b) reconstruction of a 3D data set from the projection data accumulating in the slice and/or volume scan and

c) calculation from the 3D data set of an x-ray shadow image of the examination subject as a synthetic projection image.

9. Method according to any of the claims 5 through 8, in which the slice and/or volume scanning ensues in the form of a spiral scan.

10. Method according to any of the claims 1 through 9, characterized in that a calibration of the tomography apparatus is effected during the rotation of the scanning unit (1).

11. Tomography apparatus with a scanning unit (1) that can rotate around a system axis (Z), a control device (18) for activation of the scanning unit (1) and a

bearing device (9) for an examination subject, whereby the control device (18) is fashioned such that the scanning unit (1) can be rotated without interruption from the beginning of the examination of a first examination subject (U1) until the end of the examination of a second examination subject (U2),

characterized in that

the rotation frequency (f_{Rot}) of the scanning unit (1) is set differently dependent on the type of the desired examination, for example for an examination of the heart or of the abdomen of a patient, and, when no examination of an examination subject occurs, a preset rest rotation frequency (f_A) is set that is smaller than the rotation frequency (f_{Rot}) available for the various examinations or lies in the range of the average value of the rotation frequencies (f_{Rot}) available for the various examinations.

12. Tomography apparatus according to claim 11 which is fashioned as an x-ray computer tomography (CT) apparatus.

13. Tomography apparatus according to claim 12, whereby the scanning unit (1) comprises an x-ray source (2) that can be rotated around a system axis (Z) and a detector system (5) for acquisition of the x-ray radiation emanating from the x-ray source (2), and whereby the control device (18) is fashioned such that the x-ray source (2) can rotate without interruption from the beginning of the examination of a first examination subject (U1) until the end of the examination of a second examination subject (U2).

14. Tomography apparatus according to any of the claims 11 through 13 with a cooling device (42) for dissipation of heat from the scanning unit (1),

characterized in that

the cooling device (42) comprises air drivers for generation of an air current, whereby the air drivers are mounted on a rotating frame (4) bearing the scanning unit (1) and are dimensioned such that a cooling capacity sufficient for cooling of the scanning unit (1) is achieved upon rotation of the rotating frame (40).

15. Tomography apparatus according to claim 14, characterized in that
the air drivers are fashioned as air scoops (43).

16. Tomography apparatus according to claim 14 or 15, characterized in that
the air drivers are arranged on an outside of the rotating frame (40) or on an outside of a housing wall of the rotating frame (40).